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File name - Factserver.py
from xmlrpc.server import SimpleXMLRPCServer

from xmlrpc.server import SimpleXMLRPCRequestHandler

class FactorialServer:

    def calculate_factorial(self, n):
        """Computes the factorial of a non-negative integer."""
        if not isinstance(n, int) or n < 0:
            raise ValueError("Input must be a non-negative integer.")

        result = 1
        for i in range(1, n + 1):
            result *= i
        return result

# Restrict to a particular path
class RequestHandler(SimpleXMLRPCRequestHandler):
    rpc_paths = ('/RPC2',)

# Create the server
with SimpleXMLRPCServer(('localhost', 8000), requestHandler=RequestHandler) as server:
    server.register_introspection_functions()
    server.register_instance(FactorialServer())

    print("FactorialServer is ready to accept requests...")

# Run the server's main loop
server.serve_forever()

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File name – Factclient.py

```
import xmlrpc.client
```

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# Create an XML-RPC client
```

```
with xmlrpc.client.ServerProxy("http://localhost:8000/RPC2") as proxy:
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    try:
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        # Get user input with validation
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```
        input_value_str = input("Enter a non-negative integer: ")
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```
        if not input_value_str.isdigit():
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```
            raise ValueError("Invalid input! Please enter a non-negative integer.")
```

```
        input_value = int(input_value_str)
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        # Send request to server
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        result = proxy.calculate_factorial(input_value)
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```
        print(f"Factorial of {input_value} is: {result}")
```

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    except Exception as e:
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        print(f"Error: {e}")
```

Output:

```
C:\Windows\System32\cmd.e  Windows PowerShell
Microsoft Windows [Version 10.0.26100.3476]
(c) Microsoft Corporation. All rights reserved.

D:\Anuja Documents\BE\Sem 8\DC>python Factserver.py
FactorialServer is ready to accept requests...
127.0.0.1 - - [18/Mar/2025 11:52:48] "POST /RPC2 HTTP/1.1" 200 -
```

```
C:\Windows\System32\cmd.ex  Windows PowerShell
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\shyam> D:
PS D:\> cd "Anuja Documents\BE\Sem 8\DC"
PS D:\Anuja Documents\BE\Sem 8\DC> python Factclient.py
Enter a non-negative integer: 5
Factorial of 5 is: 120
PS D:\Anuja Documents\BE\Sem 8\DC> |
```